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Courses » IC Engines and Gas Turbines

Announcements **Course** Ask a Question Progress FAQ

Unit 4 - Week 2 - Air Standard Cycles

Register for Certification exam

Course outline

How to access the portal

Week 0 - Introductory Session

Week 1 - Introduction to IC Engines

Week 2 - Air Standard Cycles

- Lec 1: Classification of IC engines
- Lec 2: Engine operating characteristics
- Lec 3: Otto, Diesel and Dual cycles
- Lec 4: Otto, Diesel and Dual cycles (Contd.)
- Lec 5: Otto, Diesel and Dual cycles (Contd.)
- Lec 6: Otto, Diesel and Dual cycles (Contd.)

Assignment 02

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment. **Due on 2019-02-13, 23:59 IST.**

1) "An Otto cycle can be called as a constant volume cycle; while the Diesel cycle may be termed as constant pressure cycle." The statement is **1 point**

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

2) Which of the following is not a necessary assumption for the air standard Otto cycle **1 point**

- The working fluid is an ideal gas with constant specific heat.
- Intake and exhaust processes are constant volume heat rejection process.
- All the thermodynamic processes are internally and externally reversible.
- The combustion process is a constant volume heat addition process.

No, the answer is incorrect.
Score: 0

Accepted Answers:
Intake and exhaust processes are constant volume heat rejection process.

3) "Crowning of a 2 stroke engine piston is done for efficient removal of the combustion products." This statement is **1 point**

- True
- False

No, the answer is incorrect.

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Carburation	ce De	<input type="radio"/> Scanning <input type="radio"/> Scavenging <input type="radio"/> Supercharging	
Week 4 - Ignition and Lubrication Systems		<p>No, the answer is incorrect. Score: 0</p> <p>Accepted Answers: <i>Scavenging</i></p>	
Week 5 - Alternative Fuels, Combustion in SI and CI Engines		<p>5) External cooling of an IC engine is essential; because a very high engine temperature can lead to 1 point</p>	
Week 6 - Fuel Injection Systems		<input type="radio"/> Scouring of cylinder <input type="radio"/> Warping of valves <input type="radio"/> Breaking up of the lubrication system <input type="radio"/> All of the above	
Week 7: Introduction to Gas Turbines		<p>No, the answer is incorrect. Score: 0</p> <p>Accepted Answers: <i>All of the above</i></p>	
Interaction Session		<p>6) An engine produces 12 kW indicated power. If its mechanical efficiency is 90%, the frictional power loss will be 1 point</p>	
Week 8 : Performance Analysis of Brayton Cycle		<input type="radio"/> 1 kW <input type="radio"/> 1.2 kW <input type="radio"/> 10.8 kW <input type="radio"/> 12 kW	
Week 9: Introduction to Various Aircraft Engine and Performance Parameters		<p>No, the answer is incorrect. Score: 0</p> <p>Accepted Answers: <i>1.2 kW</i></p>	
Week 10: Components of Brayton Cycle Based Power Plant		<p>7) A single cylinder engine has 60 mm bore and 85 mm stroke. If the compression ratio is 8, the clearance volume of the cylinder is 1 point</p>	
Week 11: Components of Brayton Cycle Based Power Plant		<input type="radio"/> 27.5 cm^3 <input type="radio"/> 34.32 cm^3 <input type="radio"/> 43.8 cm^3 <input type="radio"/> 52.6 cm^3	
Week 12: Components of Brayton Cycle Based Power Plant		<p>No, the answer is incorrect. Score: 0</p> <p>Accepted Answers: 34.32 cm^3</p>	
		<p>8) For an air standard diesel cycle with compression ratio 16, the cut off takes place at 8% of the stroke. The cut off ratio of the engine is 1 point</p>	
		<input type="radio"/> 0.2 <input type="radio"/> 1.2	

1.8 2.2

No, the answer is incorrect.

Score: 0

Accepted Answers:

2.2

9) For a 4 stroke SI engine, the maximum and minimum pressure inside the cylinder during each working cycle is 200 bar and 5 bar respectively. If the compression ratio of the engine is 8, the mean effective pressure will be _____ bar.

Hint

No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Range) 20.00,23.00

1 point

10) Consider the following data for a CI engine

Fuel-Air ratio = 0.04

Volumetric efficiency = 85 %

Indicated mean effective pressure = 8 bar

Fuel calorific value = 44000 kJ/kg

Density of in taking air = 1 kg/m³

The indicated thermal efficiency of the engine is _____ %.

Hint

No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Range) 52,55

1 point

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